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CONCEPTUAL WETLAND MITIGATION PLAN

for

WETLAND IMPACTS ASSOCIATED WITH
TERMINAL 5 DEVELOPMENT

Prepared for:

Port of Portland
700 Northeast Multnomah
Portland, Oregon 97232

Prepared by:

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Port of Portland

WETLAND IMPACTS

The Port of Portland is submitting an application to place fill material in state and federal jurisdictional wetlands at their Terminal 5 (T-5) property for development of a bulk commodities marine terminal facility. The development site is located adjacent to the Willamette River at approximately river mile 2 (Figure 1). The Port proposes to fill 12.5 acres of wetlands considered jurisdictional by the US Army Corps of Engineers (USACE); of this amount, 9.4 acres of wetland are considered jurisdictional by the Oregon Division of State Lands (ODSL). A wetland delineation report was prepared for the site (Fishman Environmental Services 1995).

The joint permit application contains information on the purpose and need for the project, and the lack of alternative sites for the project. The application also explains why filling of wetlands cannot be avoided. This information complies with OAR 141-85-aaa.

Wetland impacts at the T-5 site are shown in Table 1.

**TABLE 1. PORT OF PORTLAND TERMINAL 5
PROPOSED WETLAND FILL BY WETLAND TYPE
AS PER FEDERAL AND STATE JURISDICTION**

WETLAND TYPE	FILL (acres) USACE	FILL (acres) ODSL
Palustrine open water (POW)	4.95	4.95
Palustrine forested (PFO)	2.23	2.23
Palustrine emergent (PEM)	2.23	0.0
Palustrine shrub/scrub (PSS)	2.92	2.07
Palustrine emergent-scrub/shrub (PEM/SS)	0.16	0.16
TOTAL	12.49	9.41

The Palustrine open water (POW) wetland is a pond (referred to as "lagoon" in delineation report) that has received wastes from the adjacent steel mill and has poor water quality, including a high pH (recently measured as 10.5). The pond provides questionable habitat value for fish or wildlife; Oregon DEQ agrees that filling the pond is appropriate from a water quality standpoint.

The palustrine forested (PFO) wetland at T-5 is a willow swamp that provides the greatest values for wildlife of all the site wetlands. About one-half of the existing area of PFO wetland is proposed for filling by this project.

The remaining wetlands on the site are emergent wetlands (PEM), scrub/shrub wetlands (PSS) or a combination of these (PEM/SS). Much of the PEM wetlands barely meet the wetland criteria, and have very low wetland functions and values; these are not considered jurisdictional wetlands by ODSL but are considered jurisdictional by USACE.¹

The wetland delineation report contains a discussion of wetland functions and values for the T-5 wetlands. The table on page 7 of the delineation report shows that all of the T-5 wetlands rated "Low" for flood control, noteworthiness, educational potential, and recreation. All but one wetland rated "Low" for water quality, all but two wetlands rated "Low" for ecological integrity. The forested wetland (PFO) rated "Medium" for water quality, "Medium" for ecological integrity, and "High" for wildlife habitat. The shrub/scrub (PSS) wetlands rated "Medium" for ecological integrity and "High" for wildlife habitat. The lagoon wetland rated "Medium" for wildlife habitat.

The evaluation of wetland functions and values at T-5 shows that wildlife habitat is the most significant function and value for some of the site wetlands (forested and shrub/scrub). The proposed mitigation will result in forested, shrub and emergent wetlands with high values for wildlife. The existing pond at the mitigation site with fringing emergent marsh and willow wetlands presently provides high values for wildlife, including mammals, waterfowl, wading birds, amphibians, passerine birds, and turtles (probably Western painted).

PROPOSED WETLAND MITIGATION

The Port of Portland proposes to compensate for the loss of freshwater wetlands at the T-5 site by restoring wetlands at a nearby Port property, located adjacent to the Willamette River at approximately RM 3 (Figure 1). Wetland restoration is defined in OAR 141-85-ccc(21) as "...to rehabilitate a previously drained area by providing wetland hydrology or removing fill material...." The proposed mitigation area was historically in an area containing a large amount of wetlands, as seen from historic aerial photographs. The area was part of a wetland

¹ The USACE Portland District wetland specialist agrees with the marginal status of these areas.

complex along the Willamette River in the historic Ramsey Lake area. The subject site was filled many years ago. Two remnants of previous features remain: a small pond, and a grove of cottonwood trees. The pond and fringing PEM and PSS marsh are the only wetland features presently on the site; the cottonwood grove does not have wetland hydrology.

The proposed mitigation will remove fill material to re-establish elevations where groundwater levels will meet the wetland hydrology criterion.

The mitigation plan proposes to expand the open water area of the existing pond by 0.4 acres and add additional area of emergent, shrub and forested wetlands around it (Figure 2). The existing cottonwood grove will "anchor" the west end of the restored wetland area. Additional emergent and shrub wetlands will be restored east of N. Rivergate Blvd. by removing fill material and planting native vegetation.

The proposed mitigation plan will result in a total of 10.5 acres of restored wetland. This total will include: 8.4 acres of emergent and shrub wetland, 1.7 acres of forested wetland, and 0.4 acres of open water. This exceeds the ODSL mitigation ratio of 1:1 for wetland restoration (OAR 141-85-hhh(1)(a)).

The mitigation plan maximizes wildlife habitat functions and values by integrating existing wildlife habitat (pond and upland forest) into the mitigation area. There is another key benefit to the mitigation plan for wildlife. The mitigation site is the only non-habitat gap in a wildlife corridor that could connect the Willamette River to the Columbia Slough/Smith and Bybee Lakes area (see Figure. 1). The remainder of the corridor east of the site, between Bonneville Way and the railroad tracks, is a complex of wetlands interrupted only by North Lombard Street.² The approximately 1/2 mile piece of wildlife corridor represented by the mitigation site is presently bare fill material (river sand) except for the existing pond and cottonwood grove.

The proposed wetland mitigation project will also result in wetland functions and values not presently available at the T-5 wetlands. These include noteworthiness (increase in turtle habitat), educational potential, and recreation.

Mitigation site hydrology has been investigated by Fishman Environmental Services. Soil borings conducted on May 2, 1995 found groundwater at the following distances below the ground surface:

appr. 250 ft from river:	> -10 ft (no soil moisture at -10 ft)
center of existing cottonwood grove:	-6.7 ft
appr. 100 ft north of existing pond:	-3.7 ft
east of N. Rivergate Blvd.:	-2 to -3.5 ft.

² Future Port plans could eliminate the partial wildlife barrier created by Lombard St.

All of the soil boring locations were dredged sand material. Observation wells are being placed at the mitigation site to monitor groundwater levels through the summer and winter. No restoration is planned for the area around the south and southeast borders of the existing pond. This area was found to contain potentially hazardous materials buried on the site. No remediation action is required, and the contamination appears to be localized and stable. The mitigation site contains large electric transmission towers owned by PGE and BPA. These companies have the following restrictions for work in the utility easement: (1) no vegetation taller than 20 ft under the power lines; (2) no excavation within 50 ft of the towers, (3) gravel access roads to all towers. These restrictions have been integrated into the plan.

The goals of the compensatory wetland mitigation plan are:

1. restore wetland hydrology by removing previously placed fill material;
2. establish emergent, shrub and forested wetland using PNW native plant species;
3. establish a buffer of native upland vegetation around the wetland area;
4. restore, to the extent practicable, riparian vegetation along the river shoreline.

The target wetland functions and values for the mitigation project are:

1. establish high value wildlife habitat, and fill a gap in the wildlife corridor between the river and Columbia Slough;
2. increase the ecological integrity of the mitigation site;
3. protect and increase the noteworthiness of the existing pond;
4. provide educational and passive recreational opportunities related to wetlands and wildlife.

A monitoring program will be developed for this mitigation project. Hydrology monitoring has already begun, as discussed above. Post-construction monitoring will include: (1) continuation of hydrology monitoring, (2) annual plant monitoring to document percent ground cover and survival of shrubs and trees, (3) wildlife observations.

FINAL MITIGATION PLAN

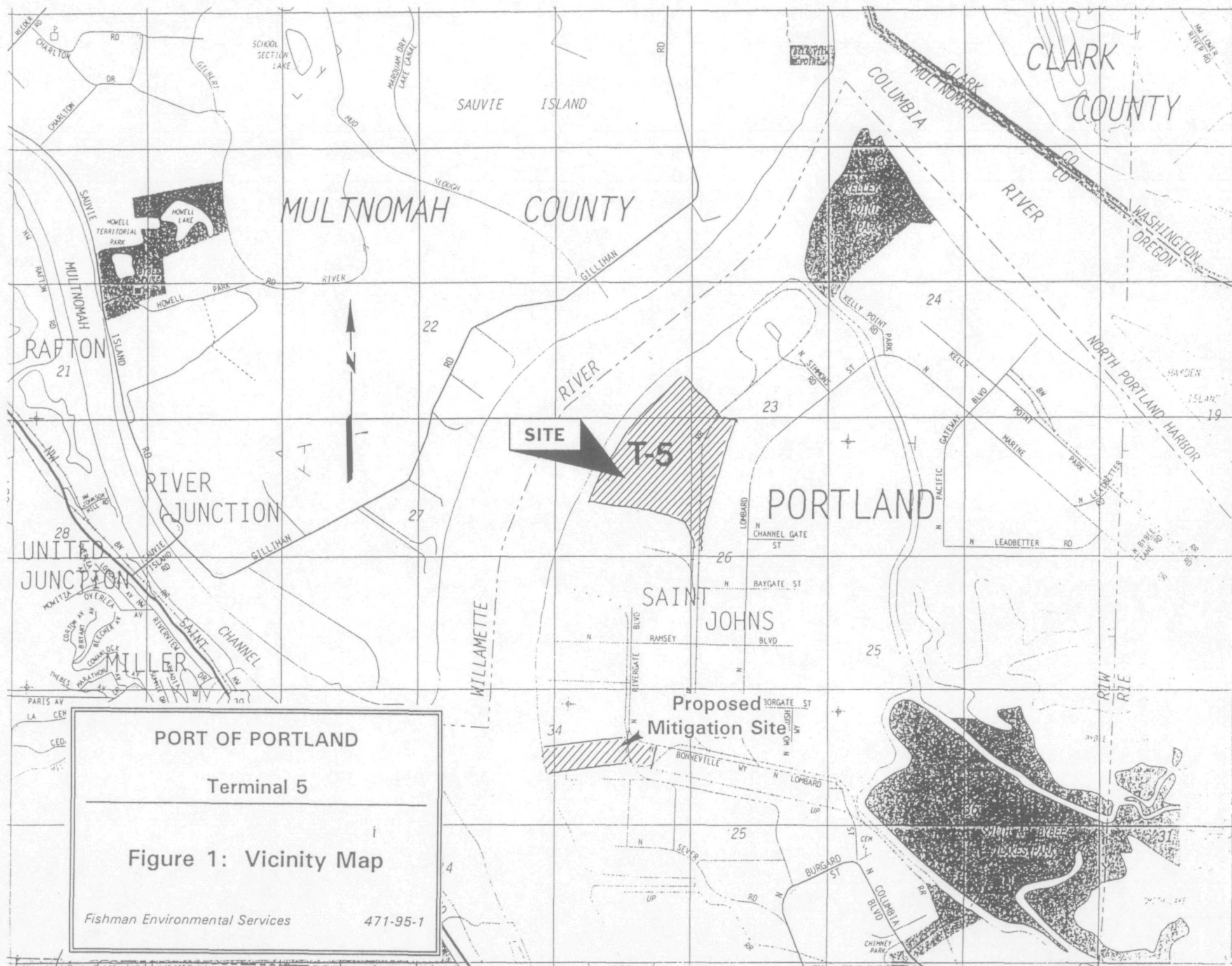
A final mitigation and monitoring plan will be developed and submitted to the USACE and ODSL prior to issuance of permits for this project. The final plan will incorporate comments and suggestions from the USACE and ODSL to the extent practicable.

COORDINATION

Coordination between the USACE and ODSL on design of the wetland mitigation plan will be with the following people:

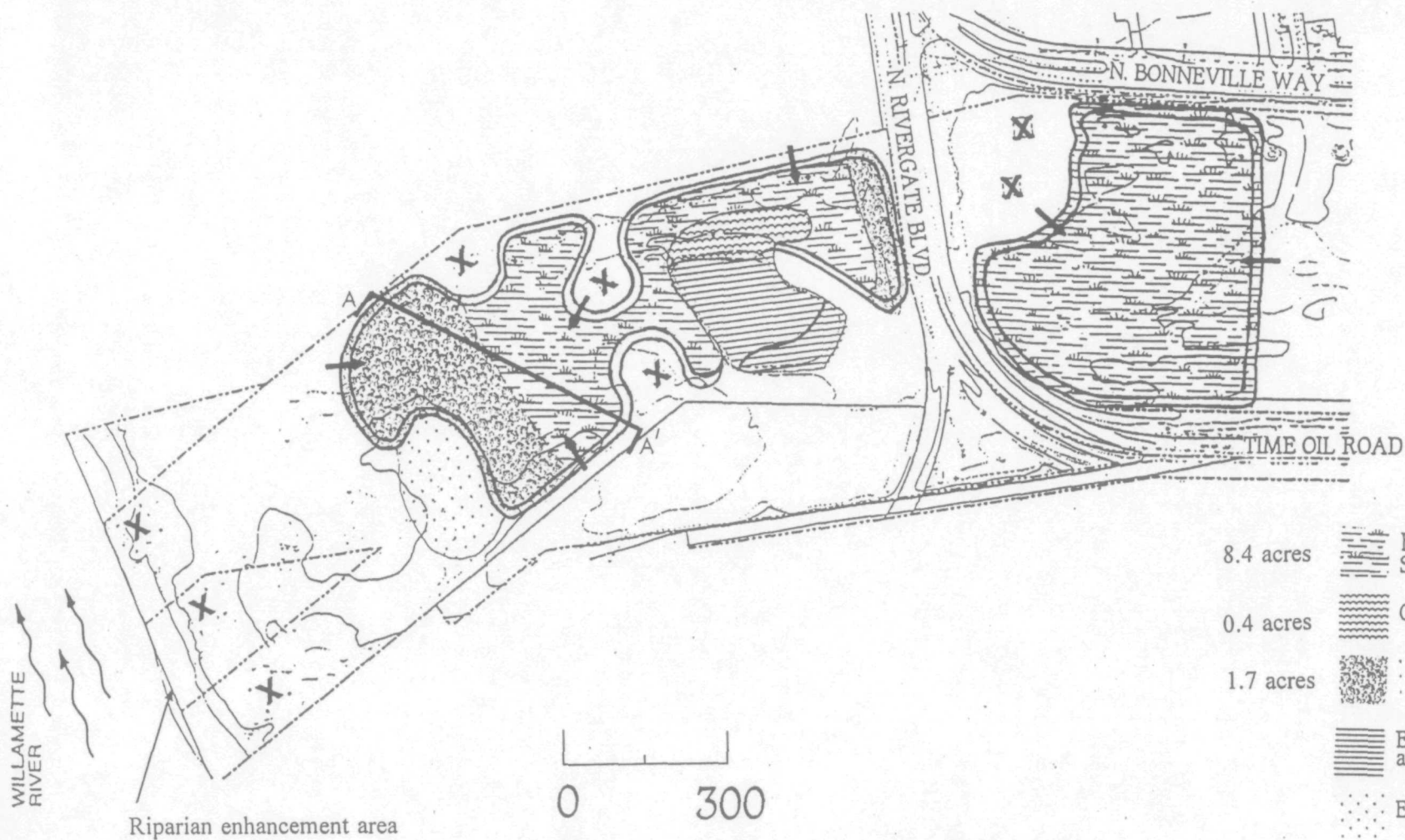
Port of Portland Tim Van Wormer, Manager, Industrial Park Services 731-7527

Fishman Environmental Services Paul Fishman, Senior Ecologist 224-0333
or Steve Johnson, Aquatic Ecologist





Scale: 1"=300ft.



LEGEND

8.4 acres Emergent Wetland
Shrub/Scrub wetland

0.4 acres Open water

1.7 acres forested wetland

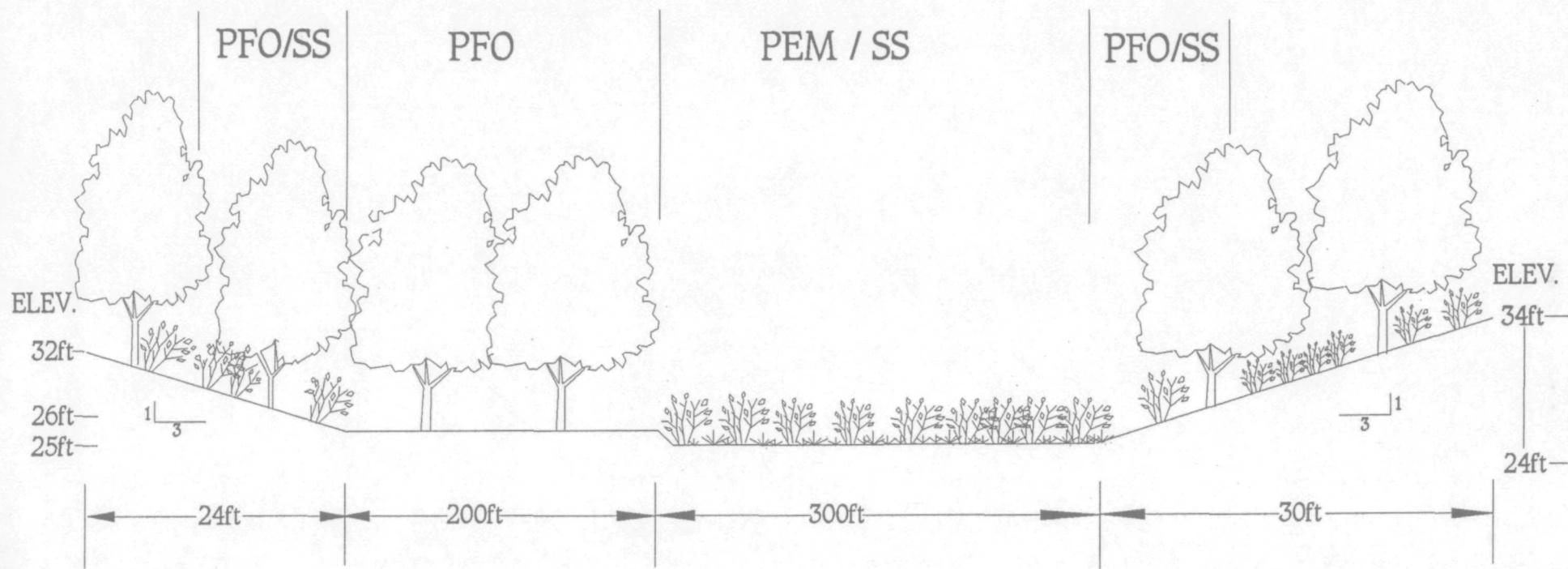
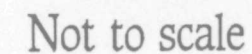

Existing Open water
and forested wetland

Existing Cottonwood grove

X Transmission tower

Cut area and direction of slope

										PORT OF PORTLAND PORTLAND, OREGON						T-5 Conceptual Mitigation Plan	
																Figure 2	

[illegible]

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DESIGN NUMBER

471-95-1
PROJECT NUMBER

SCALE	Not to Scale
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Cross-Section A-A'

SUBMITTED BY

FIGURE NO. 3